IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1.   (original)   An ID code management method for managing an ID code using an ID code management system including an ID code order receiving terminal for receiving an order for issue of an ID code, a production factory terminal for producing an identification tag storing said ID code, and an ID code management terminal connected to said ID code order receiving terminal and said production factory terminal through a network, said identification tag having mounted thereon an electronic circuit chip with data capable of being read from an external source, said electronic circuit chip having a read-only storage area for storing externally readable data constituting an extension ID code including an ordered ID code, attribute information and a message authentication code of the ID code, said method comprising the steps of:

an order receiving ID code registration step in which in the case where an order receiving ID code registration request including said extension ID code is sent to said ID code management terminal from said ID code order receiving terminal, said extension ID code is registered in a data base of said ID code management terminal as already registered; and

a produced ID code registration step in which in the case where a produced ID code registration request including said extension ID code stored in said produced identification tag is sent from said production factory terminal to said ID code

management terminal, said identification tag storing said extension ID code is registered in said data base of said ID code management terminal as already produced.

2.   (original)   An ID code management method according to Claim 1, further comprising an ID code duplication check step in which in the case where an ID code duplication check request including said extension ID code is sent to said ID code management terminal from said ID code order receiving terminal, said ID code management terminal checks whether said extension ID code is registered or not in said data base as already ordered and the result of the check is notified to said ID code order receiving terminal.

3.   (original)   An ID code management method according to Claim 1, further comprising a drop-out ID code registration step in which in the case where a drop-out ID code registration request including said extension ID code stored in said identification tag is sent to said ID code management terminal from said identification tag production factory terminal, the extension ID code included in said request is registered in said data base of said ID code management terminal as a drop-out ID code.

4.   (original)   An ID code management method according to Claim 1, wherein said ID code management system includes an ID code utilization terminal connected to said ID code management terminal through a network, said method

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further comprising a verification step in which in the case where a verification request including said extension ID code is sent to said ID code management terminal from said ID code utilization terminal, said extension ID code is compared with the extension ID code stored in the data base of said ID code management terminal and it is verified in said ID code management terminal whether said message authentication code included in said extension ID code sent to said ID code management terminal is legitimate or not.

5.   (original)   An ID code management method according to Claim 1, wherein said ID code management system includes an ID code utilization terminal connected to said ID code management terminal through a network, said method further comprising a step in which in the case where a verification key request including the attribute information of said ID code is sent from said ID code utilization terminal to said ID code management terminal, a key for verification of said message authentication code stored in the data base of said ID code management terminal as an item corresponding to attribute information is transmitted to said ID code utilization terminal.

6.   (original)   An ID code management method according to Claim 1, wherein said ID code management system comprises an ID code utilization terminal connected to said ID code management terminal through a network, said method further comprising a step in which in the case where a decryption key request is sent from said ID code utilization terminal to said ID code management terminal, the key

for decryption of an encrypted extension ID code stored in the data base of said ID code management terminal is transmitted to said ID code utilization terminal.

7. (original) An ID code management method according to Claim 1, wherein said ID code management system comprises an ID code utilization terminal connected to said ID code management terminal through a network, said method further comprising an invalid ID code registration step in which in the case where an invalid ID code registration request including said extension ID code is sent from said ID code utilization terminal to said ID code management terminal, the extension ID code included in said request is registered in said data base of said ID code management terminal as an invalid ID code.

8. (original) An ID code management method according to Claim 1, wherein said ID code management system comprises a customer terminal connected to said ID code order receiving terminal through a network, said method further comprising:

an extension ID code generating step in which in the case where the order information including the information on the customer ordering said identification tag, an ID code desirably stored in said identification tag and a key for generating a message authentication code of said ID code is sent to said ID code order receiving terminal from said customer terminal, the attribute information and said message authentication code of said ID code are generated in said ID code order receiving terminal using said order information thereby to generate said extension ID code;

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a step in which the order receiving information including said order information and said extension ID code is transmitted by said ID code order receiving terminal in response to a request from said customer terminal;

an order receiving ID code registration request step in which an order receiving ID code registration request including said order receiving information is transmitted by said ID code order receiving terminal to said ID code management terminal; and

an identification tag production request step in which an identification tag production request including said extension ID code is transmitted by said ID code order receiving terminal to said identification tag production factory terminal.

9.   (original)   An ID code management method according to Claim 1, further comprising:

a step in which said identification tag production factory terminal causes said identification tag to be produced in the case where an identification tag production request including said extension ID code is sent to said identification tag production factory terminal from said ID code order receiving terminal;

a step in which said identification tag production factory terminal causes said produced identification tag to be inspected; and

a produced ID code registration request step in which a produced ID code registration request including said extension ID code stored in said identification tag is transmitted by said identification tag production factory terminal to said ID code management terminal in the case where the result of the inspection in said

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inspection step is successful.

10. (original) An ID code management method according to Claim 1, further comprising:

an inspection input step in which said ID code utilization terminal receives an instruction for a processing operation;

an ID code read step in which said ID code utilization terminal acquires said extension ID code from said electronic circuit chip mounted on said identification tag;

a verification step in which said ID code utilization terminal verifies the legitimacy of said extension ID code acquired in said read step, using said message authentication code included in said extension ID code;

a step in which the information corresponding to said extension ID code acquired in said ID code read step is retrieved from the data base of said ID code utilization terminal and a process determined in accordance with said information is performed in said ID code utilization terminal in the case where the instruction received in said instruction input step is an instruction to read information;

a step in which said ID code utilization terminal acquires update information and updates the information corresponding to said extension ID code acquired in said ID code read step using said update information in the case where the instruction received in said instruction input step is an update instruction;

a step in which said ID code utilization terminal acquires new information and stores said new information in the data base of said ID code utilization terminal as an item corresponding to said extension ID code acquired in said ID code read step in

the case where the instruction received in said instruction input step is an instruction for new registration; and

an invalid registration request step in which said ID code utilization terminal retrieves said extension ID code corresponding to the information of said identification tag from the data base of said ID code utilization terminal and transmits an invalid ID code registration request including said extension ID code to the ID code management terminal in the case where the instruction received in said instruction input step is an instruction to register an invalid ID code.

11.　(original)　An ID code management system comprising an ID code order receiving terminal for receiving an order for issue of an ID code, a production factory terminal for producing an identification tag storing said ID code, and an ID code management terminal connected to said ID code order receiving terminal and said production factory terminal through a network;

wherein said identification tag includes an electronic circuit chip capable of which data can be read from an external source;

wherein said electronic circuit chip has a read-only storage area for storing an extension ID code including an ordered ID code, ID code attribute information and an ID code message authentication code constituting externally readable data;

wherein said ID code order receiving terminal includes an order receiving ID code registration request processing unit for sending to said ID code management terminal an order receiving ID code registration request including the order receiving information generated from the order information received at the time of receiving an

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order;

wherein said ID code management terminal includes an order receiving ID code registration processing unit for registering said extension ID code as registered in a data base in the case where said order receiving ID code registration request is sent to said ID code management terminal;

wherein said production factory terminal includes a produced ID code registration request processing unit for causing a produced ID code registration request including said extension ID code stored in said produced identification tag to be sent to said ID code management terminal; and

wherein said ID code management terminal includes a produced ID code registration processing unit for registering said identification tag storing said extension ID code as produced in said data base in the case where said produced ID code registration request is sent to said ID code management terminal.

12. (original) An ID code management system according to Claim 11, in which said ID code management terminal further includes:

an ID code duplication check processing unit for checking whether said extension ID code is registered in said data base as ordered and notifying the result of check to said ID code order receiving terminal in the case where an ID code duplication check request including said extension ID code is sent to said ID code management terminal from said ID code order receiving terminal.

13. (original) An ID code management system according to Claim 11,

in which said ID code management terminal further includes:

a drop-out ID code registration processing unit in which in the case where a drop-out ID code registration request including said extension ID code stored in said identification tag is sent to said ID code management terminal from said identification tag production factory terminal, the extension ID code included in said drop-out ID code registration request is registered as a drop-out ID code in said data base.

14.   (original)   An ID code management system according to Claim 11, comprising an ID code utilization terminal connected to said ID code management terminal through a network;

wherein said ID code management terminal further includes a verification processing unit for verifying whether the message authentication code included in the extension ID code included in a verification request which may be sent from said ID code utilization terminal to said ID code management terminal is legitimate by comparing said extension ID code included in said verification request with the extension ID code stored in a data base.

15.   (original)   An ID code management system according to Claim 11 comprising an ID code utilization terminal connected to said ID code management terminal through a network;

wherein said ID code management terminal further includes a processing unit in which in the case where a verification key request including the attribute information of said ID code is sent from said ID code utilization terminal to said ID

code management terminal, a key for verification of said message authentication code stored in a data base as an item corresponding to the attribute information of said ID code is transmitted to said ID code utilization terminal.

16.   (original)   An ID code management system according to Claim 11, comprising an ID code utilization terminal connected to said ID code management terminal through a network;

wherein said ID code management terminal further includes a processing unit for transmitting to said ID code utilization terminal a key for decrypting the encrypted extension ID code stored in a data base in the case where a decryption key request is sent from said ID code utilization terminal to said ID code management terminal.

17.   (original)   An ID code management system according to Claim 11, comprising an ID code utilization terminal connected to said ID code management terminal through a network;

wherein said ID code management terminal further includes an invalid ID code registration processing unit for registering in said data base said extension ID code included in an invalid registration request as an invalid ID code in the case where said invalid ID code registration request is sent from said ID code utilization terminal to said ID code management terminal through a network.

18.   (original)   An ID code management system according to Claim 11, comprising a customer terminal connected to said ID code order receiving terminal

through a network:

wherein said ID code order receiving terminal includes;

an extension ID code generation processing unit for generating said extension ID code by generating the attribute information and said message authentication code of said ID code using the order information which may be sent from said customer terminal to said ID code order receiving terminal and includes the information on the customer ordering said identification tag, an ID code desirably stored in said identification tag and a key for generating said message authentication code of said ID code;

an order receiving information transmission processing unit for transmitting the order receiving information including said order information and said extension ID code in response to a request from said customer terminal;

an order receiving ID code registration request processing unit for transmitting the order receiving registration request including said order receiving information to said ID code management terminal; and

an identification tag production request processing unit for transmitting an identification tag production request including said extension ID code to said identification tag production factory terminal.

19.   (original)   An ID code management system according to Claim 11, wherein said identification tag production factory terminal includes:

a control unit for instructing said identification tag to be produced and said produced identification tag to be inspected in the case where an identification tag

production request including said extension ID code is sent from said ID code order receiving terminal to said identification tag production factory terminal; and

a produced ID code registration request processing unit for transmitting a produced ID code registration request including said extension ID code stored in said identification tag to said ID code management terminal in the case where the result of inspection in said inspection processing unit is successful.

20.   (original)   An ID code management system according to Claim 11, wherein said ID code utilization terminal includes:

an instruction input processing unit for receiving an instruction for a processing operation;

an ID code read processing unit for acquiring said extension ID code from said electronic circuit chip mounted on said identification tag;

a verification processing unit for verifying the legitimacy of said extension ID code acquired in said read processing unit, using said message authentication code included in said extension ID code;

a processing unit for retrieving from a data base the information corresponding to said extension ID code acquired in said ID code read processing unit and performing a process determined in accordance with said information in the case where the instruction received in said instruction input processing unit is an information read instruction;

a processing unit for acquiring update information and updating the information corresponding to said extension ID code acquired in said ID code read

processing unit, using said update information, in the case where the instruction received in said instruction input processing unit is an update instruction;

a processing unit for acquiring new information and storing said new information in a data base as an item corresponding to said extension ID code acquired in said ID code read processing unit in the case where the instruction received in said instruction input processing unit is an instruction for new registration; and

a processing unit for retrieving said extension ID code corresponding to the information of said identification tag from a data base and transmitting an invalid ID code registration request including said extension ID code to the ID code management terminal in the case where the instruction received in said instruction input step is an instruction for invalid ID code registration.

21. (original) An ID code management terminal connected to networks and used for management of the extension ID code stored in an identification tag, wherein said tag includes a read-only storage area from which data can be read by an external source, and said area has stored therein an extension ID code including an ordered ID code, the attribute information and a message authentication code of said ID code, said ID code management terminal comprising:

storage means for storing a data base for registering said extension ID code and the information related to said extension ID code;

communication means for establishing communication with other terminals connected to said networks;

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order receiving ID code registration means for registering said extension ID code as registered in the case where an order receiving registration request including the order receiving information generated from the order information received at the time of ordering is sent from any of said other terminals to said ID code management terminal through said communication means; and

produced ID code registration means for registering said identification tag storing said extension ID code as produced in said data base in the case where a produced ID code registration request including said extension ID code stored in said produced identification tag is sent from any of said other terminals to said ID code management terminal through said communication means.

22. (original) An ID code management terminal according to Claim 21, further comprising ID code duplication check means in which in the case where an ID code duplication check request including said extension ID code is sent from any of said other terminals through said communication means, it is checked whether said extension ID code is registered in said data base as ordered, said communication means transmitting the result of check in said ID code duplication check means to said other terminal.

23. (original) An ID code management terminal according to Claim 21, further comprising drop-out ID code registration means, in which in the case where a drop out ID code registration request including said extension ID code stored in said identification tag is sent to the ID code management terminal from any of said other

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terminals through said communication means, said extension ID code is registered in said data base as a drop-out ID code.

24. (original) An ID code management terminal according to Claim 21, further comprising verification means, in which in the case where a verification request including said extension ID code is sent from any of said other terminals to the ID code management terminal through said communication means, said extension ID code is compared with the extension ID code stored in a data base, and verifying whether said message authentication code included in said extension ID code is legitimate or not, said communication means transmitting the result of verification in said verification means to said other terminal.

25. (original) An ID code management terminal according to Claim 21, further comprising verification key acquisition means, in which in the case where a verification key request including the attribute information of said ID code is sent from any of said other terminals to the ID code management terminal through said communication means, the key for verification of said message authentication code stored in a data base as an item corresponding to said ID code attribute information is acquired, said communication means transmitting the key for verification of said message authentication code to said other terminal.

26. (original) An ID code management terminal according to Claim 21, further comprising decryption key acquisition means, in which in the case where a

decryption key request is sent from any of said other terminals to the ID code management terminal through said communication means, a key for decryption of the encrypted extension ID code stored in a data base is acquired, said communication means transmitting the key for decrypting said encrypted extension ID code to said other terminal.

27. (original) An ID code management terminal according to Claim 21, further comprising invalid ID code registration means, in which in the case where an invalid registration request including said extension ID code is sent from any of said other terminals to the ID code management terminal through said communication means, the extension ID code included in said invalid ID code registration is registered in said data base as an invalid ID code.

28. (original) An ID code order receiving terminal connected to networks for receiving an order for issue of an ID code stored in an identification tag, said identification tag having a read-only storage area from which data can be read by external means, said storage area having stored therein an extension ID code including an ID code ordered, the attribute information and a message authentication code of said ID code, said ID code order receiving terminal comprising:

communication means for establishing communication with other terminals connected to said networks;

an extension ID code generating unit in which in the case where the order information including information on the customer ordering said identification tag, an

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ID code desirably stored in said identification tag and a key for generating a message authentication code of said ID code is sent from any of said other terminals to said order receiving terminal, said extension ID code is generated by generating the attribute information and said message authentication code of said ID code using said order information;

order receiving ID code registration request means for transmitting through said communication means to said ID code management terminal an order receiving registration request including the order receiving information generated from said order information; and

identification tag production request means for transmitting an identification tag production request including said extension ID code to said identification tag production factory terminal through said communication means.

29. (original) An ID code order receiving terminal according to Claim 28, further comprising ID code duplication check request processing unit for transmitting an ID code duplication check request including said extension ID code to any of said other terminals through said communication means and thereby causing to check whether said extension ID code is duplicated with the extension ID code registered in said ID code management terminal.

30. (original) An ID code order receiving terminal according to Claim 28, further comprising means for generating a random number and using said random number as a key for generating said message authentication code.

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31. (original) An ID code order receiving terminal according to Claim 28, further comprising means for encrypting said extension ID code and attaching an encryption code indicating that said extension ID code is encrypted.

32. (original) An identification tag production factory terminal connected to a network and used in an identification tag production factory for producing an identification tag, said identification tag having a read-only storage area from which data can be read by external means, said storage area having stored therein an extension ID code including an ordered ID code, the attribute information and a message authentication code of an ID code, said identification tag production factory terminal comprising:

communication means for establishing communication with other terminals connected to said network;

control means in which in the case where an identification tag production request including said extension ID code is sent from any of said other terminals to said identification tag production factory terminal through said communication means, said identification tag is caused to be produced in accordance with said production request and said produced identification tag is caused to be inspected; and

produced ID code registration request means, in which in the case where the result of said inspection is successful, a produced ID code registration request including said extension ID code stored in said identification tag is caused to be

transmitted to said other terminal through said communication means and said other terminal is caused to register said identification tag including said extension ID code as produced.

33. (original) An identification tag production factory terminal according to Claim 32, further comprising drop-out ID code registration request means, in which in the case where the result of said inspection is a failure and said identification tag is not required to be produced again, a drop-out ID code registration request including said extension ID code stored in said identification tag is caused to be transmitted to any of said other terminals through said communication means and said other terminal is caused to register said extension ID code as a drop-out ID code.

34. (original) An ID code utilization terminal connected to a network and used for utilization of an identification tag, said identification tag having a read-only storage area from which data can be read by external means, said storage area having stored therein an extension ID code including an ordered ID code, the attribute information and a message authentication code of the ID code, said ID code utilization terminal comprising:

storage means for storing a data base for registering said extension ID code, the information related to said extension ID code and the information corresponding to said identification tag storing said extension ID code;

communication means for establishing communication with other terminals

connected to said network;

instruction input means for receiving an instruction for performing a processing operation;

ID code read means for acquiring said extension ID code from said electronic circuit chip mounted on said identification tag;

verification means for verifying the legitimacy of said extension ID code acquired in said ID code read means, using said message authentication code included in said extension ID code;

means for retrieving from a data base the information corresponding to said extension ID code acquired in said ID code read means and performing a process determined in accordance with said information, in the case where the instruction received in said instruction input means is an information read instruction;

means for acquiring update information and updating the information corresponding to said extension ID code acquired in said ID code read means, using said update information, in the case where the instruction received in said instruction input means is an update instruction;

means for acquiring new information and storing said new information in said data base as an item corresponding to said extension ID code acquired in said ID code read means, in the case where the instruction received in said instruction input means is an instruction for new registration; and

means for retrieving said extension ID code corresponding to the information of said identification tag from said data base and transmitting an invalid ID code registration request including said extension ID code to the ID code management

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terminal, in the case where the instruction received in said instruction input means is an instruction for registering an invalid ID code.

35.   (original)   An ID code utilization terminal according to Claim 34, further comprising means for decrypting said extension ID code acquired in said ID code read means using the decryption key stored in said storage means in the case where said extension ID code is encrypted.

36.   (original)   An ID code utilization terminal according to Claim 34, further comprising means for transmitting a decryption key request to any of said other terminals and causing said other terminal to transmit said decryption key through said communication means, in the case where the extension ID code acquired in said ID code read means is encrypted and said storage means has no encryption key.

37.   (original)   An ID code utilization terminal according to Claim 34, further comprising means for transmitting a verification key request including said extension ID code acquired in said ID code read means to any of said other terminals and causing .said other terminal to transmit said verification key through said communication means, in the case where said ID code utilization terminal has no key for verification of said message authentication code included in said extension ID code acquired in said ID code read means.

38.   (original)   An ID code utilization terminal according to Claim 34, further comprising verification request means for transmitting a verification request including said extension ID code acquired in said ID code read means to any of said other terminals through said communication means and causing said other terminal to verify the legitimacy of said extension ID code, said verification means using the result of said verification request sent from said other terminal as the result of inspection.

39.   (original)   A program product for realizing an ID code management system including an ID code order receiving terminal for receiving an order for issue of an ID code, an identification tag production factory terminal for producing an identification tag storing said ID code, and an ID code management terminal, using a plurality of computers connectable to a network, said program product comprising:

a medium capable of being read by said computers;

a module for realizing an order receiving ID code registration request processing unit for causing said computer constituting said ID code order receiving terminal to send to said ID code management terminal an order receiving registration request including the order receiving information generated from the order information received at the time of receiving an order;

a module for realizing an order receiving ID code registration processing unit for causing said computer constituting said ID code management terminal to register said extension ID code as registered in a data base in the case where said order receiving ID code registration request is sent to said computer;

a module for realizing a produced ID code registration request processing unit for causing said computer constituting said identification tag production factory terminal to send to said ID code management terminal a produced ID code registration request including said extension ID code stored in said produced identification tag; and

a module for realizing a produced ID code registration processing unit for causing said computer constituting said ID code management terminal to register in said data base said identification tag storing said extension ID code as produced in the case where said produced ID code registration request is sent to said computer.

40.   (currently amended)A material object having an identification tag for managing the distribution, wherein said identification tag stores an extension ID code including the ID code of said material object, the attribute information and the message authentication code for said material object, ~~and~~

wherein the legitimacy of said extension ID code can be checked by use of a data base storing said ID code, said attribute information, said message authentication code and a key for verifying said message authentication code by relating said ID code, said attribute information, said message authentication code and said key to each other, and

wherein said extension ID code further includes version information indicating the number of digits of said extension ID code, the number of digits of said message authentication code and a method of calculation, and wherein said message authentication code is used also for tampering of said version information.

41. (original) A material object having an identification tag according to Claim 40, wherein said extension ID code further includes class information for controlling the assignment of said ID code and said attribute information.

Claim 42 (canceled).